

## SECURITY INFORMATION

10 November 1953

MEMORANDUM FOR: CHIEF, SE

SUBJECT: Comments on Test of Infrared Beacon

REFERENCES: (a) Dispatch No. SGAA-6250 of 29 September 1953  
(b) Secret Memo from Chief, SE, to Chief, TSS,  
Attn: [redacted] dated 21 October 1953;  
Subject: same as above

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1. The following comments on the tests of the infrared beacon described in Reference (a) are submitted:

a. Paragraph 2; This particular beacon has been viewed through a Sniperscope Viewer at a distance of seven miles; it is felt that through the binoculars it should be visible about four miles. However, the binoculars are still in a developmental stage and not completely reliable. In addition, a boat is not a stable platform, and although the beacon has about a 30° beam, it is believed that at ranges much beyond a mile, it might be visible intermittently. It has been the experience in the few field tests held to date that the burned-off mantle does not disintegrate with normal field handling, and that in many operational applications the initial firing of the mantle could take place prior to the immediate operation. It is true that it would be a major problem in the operation where this could not be done. We will investigate burning of the mantle with the filter and shield in place, as the answer to this problem.

b. Paragraph 3; In the one air to ground test held at Headquarters to date, five beacons placed in a pattern on the ground were clearly visible through a sniperscope at three miles on a rather misty night. Some trouble was encountered because of the fringe of trees around the area where the beacons were placed and because of the low altitude, 1000 - 5000 feet. There were quite a few other lights in the vicinity of the test area; perhaps the use of five or six beacons is the only answer to the problem of operating in the vicinity of other lights. Further identification can be had by checking to see if the lights seen through the viewer are still there when viewed with the naked eye.

c. Paragraph 4;

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c. Paragraph 4; It is agreed that there were fair simulations of average field conditions. However, packaging should solve the problem of cracked lenses and leaking tanks. The problem of cracked lenses is not too serious, however, since the mounting brackets hold the lenses in place whether or not they are cracked. It is possible that they might crack from heat although they are made of pyrex glass. As mentioned before, these viewers are developmental items and are being improved.

d. Paragraph 5; There is a quantity of infrared plastic filter materials available in APD. It is temperature and humidity sensitive and must be used carefully. That used with the beacon is laminated and sealed between two pieces of plastic. With the proper precautions, it is believed that it should be of extreme operational value. It is the most efficient infrared filter--passing infrared and blocking visible--that is currently known to APD. The Corps of Engineers has a research program on the development of a coded gas mantle beacon which APD is following. The Image Metascopes, particularly the T-1, referred to here might be better for the above operations than the binoculars.

e. Paragraph 6; There is certainly room for improvement in this type equipment and it is currently underway in APD. There is also the need for testing of other equipment than that mentioned here. An APD report on such equipment is being prepared and should be completed within two weeks; a copy will be forwarded to SE. APD is currently negotiating a development production of 100 such beacons and in about four months should be able to make some available for field test and evaluation.

f. Paragraph 7; A quantity of infrared field material could be made available immediately if requested through TSS/POS. A quantity of six beacons could also be made available as soon as they are manufactured. More viewers are to be obtained by APD within three to six months; two or three could be made available at that time.

2. Reports such as that submitted are of extreme value in enabling APD to best supply the field. More are welcome and encouraged.

3. Further questions or need for additional information should be referred to

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TSS/APD/DLC:hvm

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